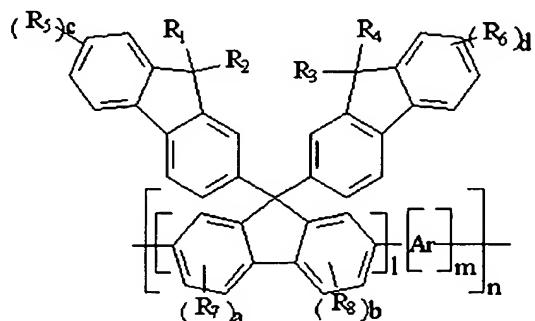


Claims

[1] An organic electroluminescent polymer having 9,9-di(fluorenyl)-2,7-fluorenyl unit represented by the following Formula 1:

Formula 1

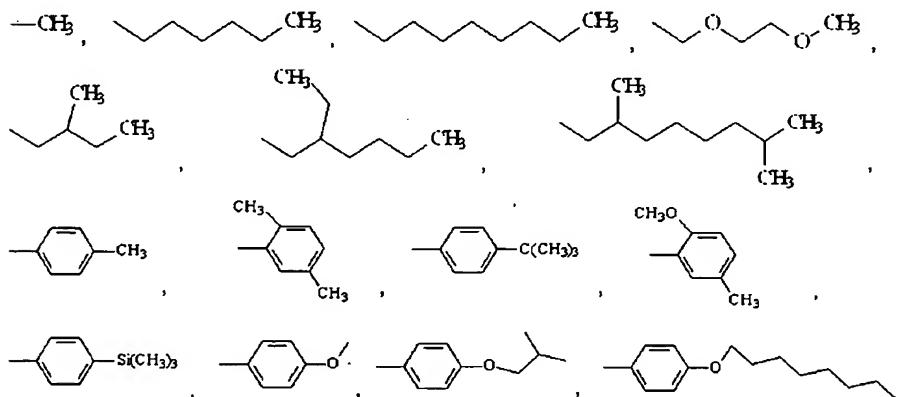


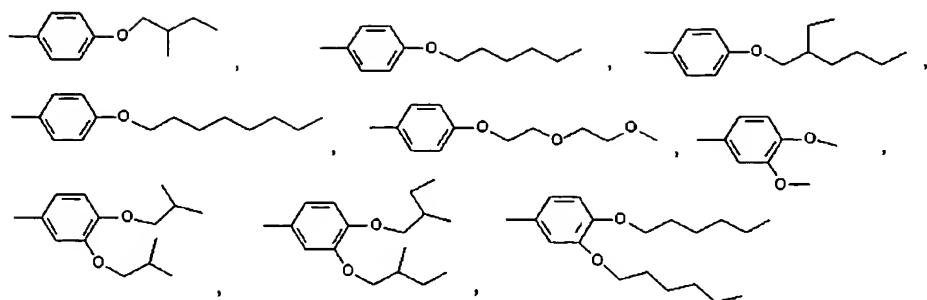
wherein, R_1 , R_2 , R_3 and R_4 are the same or different, each being a linear or branched alkyl group of 1-20 carbons; an aryl group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons; a linear or branched alkyl group of 1-20 carbons having at least one hetero-atom selected from the group consisting of F, S, N, O, P and Si; an aryl group which is substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons containing at least one hetero-atom selected from the group consisting of F, S, N, O, P and Si; an aryl group having a heterocyclic moiety of 2-24 carbons which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons; an aryl group having a heterocyclic moiety of 2-24 carbons which is substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons containing at least one hetero-atom selected from the group consisting of F, S, N, O, P and Si; a substituted or unsubstituted trialkylsilyl group of 3-40 carbons; a substituted or unsubstituted arylsilyl group of 3-40 carbons; a substituted or unsubstituted carbazole group of 12-60 carbons; a substituted or unsubstituted phenothiazine group of 6-60 carbons; or a substituted or unsubstituted arylamine group of 6-60 carbons; R_5 , R_6 , R_7 and R_8 are the same or different, each being hydrogen; a linear or branched alkyl or alkoxy group of 1-20 carbons; an aryl group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons; a linear or branched alkyl or alkoxy group of 1-20 carbons having at least one

hetero-atom selected from the group consisting of F, S, N, O, P and Si; an aryl group which is substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons containing at least one hetero-atom selected from the group consisting of F, S, N, O, P and Si; an aryl group having a heterocyclic moiety of 2-24 carbons which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons; an aryl group having a heterocyclic moiety of 2-24 carbons which is substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons containing at least one hetero-atom selected from the group consisting of F, S, N, O, P and Si; a substituted or unsubstituted trialkylsilyl group of 3-40 carbons; a substituted or unsubstituted arylsilyl group of 3-40 carbons; a substituted or unsubstituted carbazole group of 12-60 carbons; a substituted or unsubstituted phenothiazine group of 6-60 carbons; or a substituted or unsubstituted arylamine group of 6-60 carbons; a, b, c and d are the same or different, each being an integer of 1-3; Ar is selected from the group consisting of a substituted or unsubstituted aromatic moiety of 6-60 carbons, a substituted or unsubstituted heteroaromatic moiety of 2-60 carbons, and combinations thereof; and l is an integer of 1-100,000, m is an integer of 0-100,000, and n is an integer of 1-100,000.

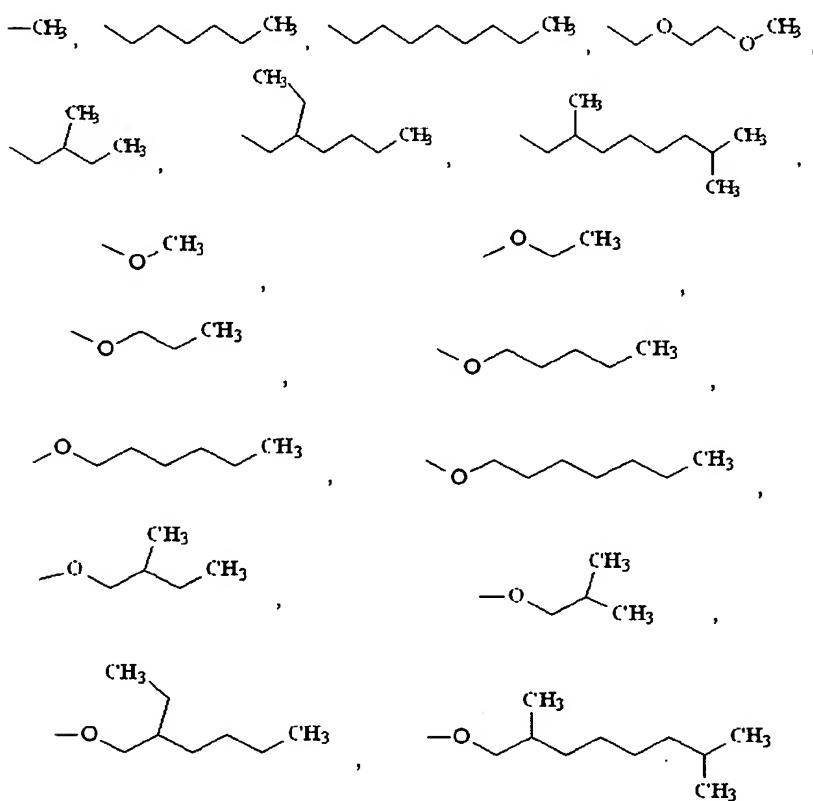
[2]

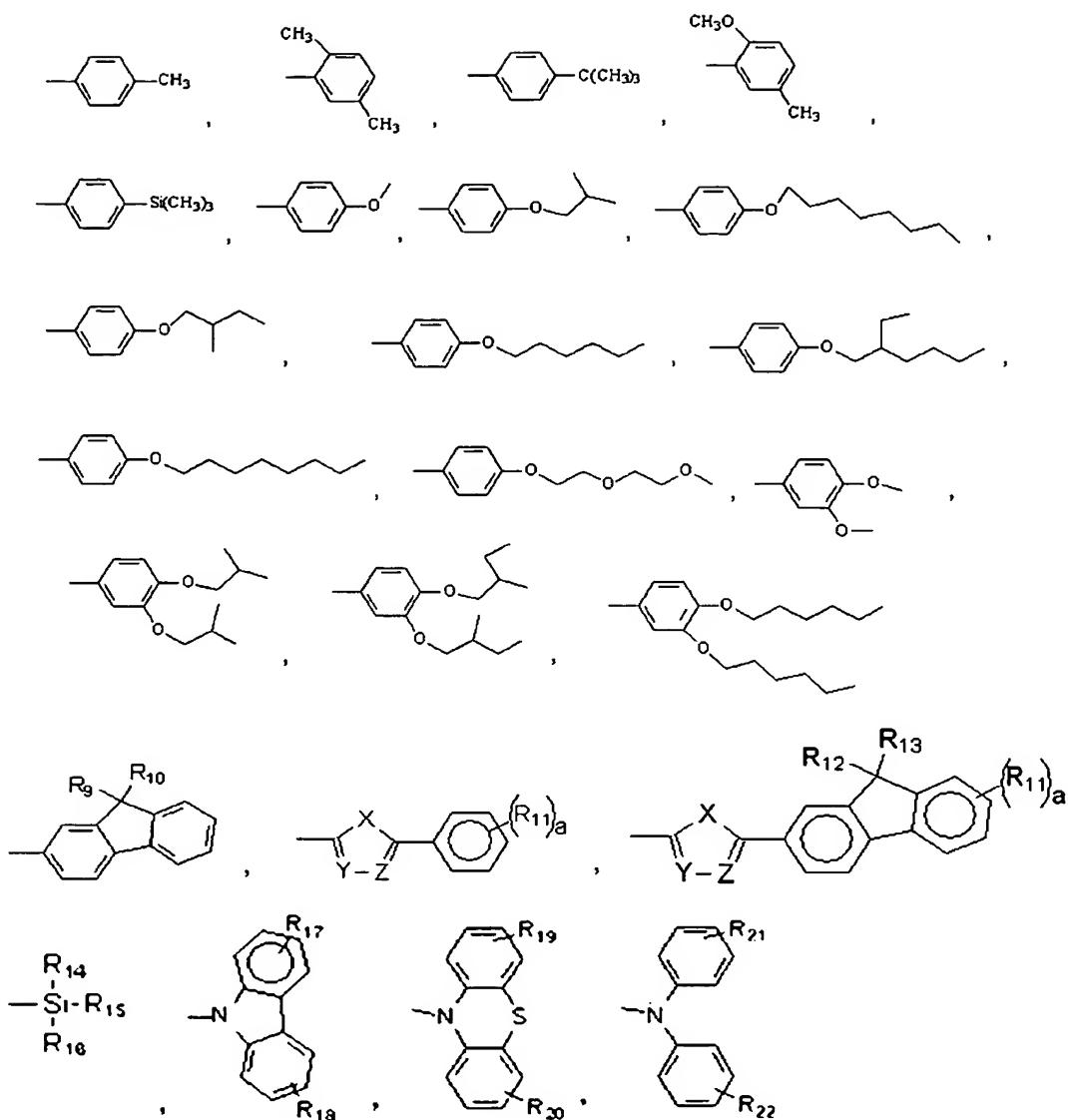
The organic electroluminescent polymer as set forth in claim 1, wherein said R_1 , R_2 , R_3 and R_4 , respectively are selected from the following group:





[3] The organic electroluminescent polymer as set forth in claim 1, wherein said R_5 and R_6 , respectively are selected from the following group:
H,





wherein, R_9 and R_{10} are the same or different, and respectively are a linear or branched alkyl group of 1-20 carbons;

R_{11} is hydrogen or a linear or branched alkyl, alkoxy or trialkylsilyl group of 1-20 carbons;

R_{12} and R_{13} are the same or different, and respectively are a linear or branched alkyl group of 1-20 carbons;

R_{14} , R_{15} and R_{16} are the same or different, and respectively are a linear or branched alkyl or alkoxy group of 1-20 carbons; or an aryl group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons;

R_{17} , R_{18} , R_{19} , R_{20} , R_{21} and R_{22} are the same or different, and respectively are hydrogen; a linear or branched alkyl or alkoxy group of 1-20 carbons; or an aryl

group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons;

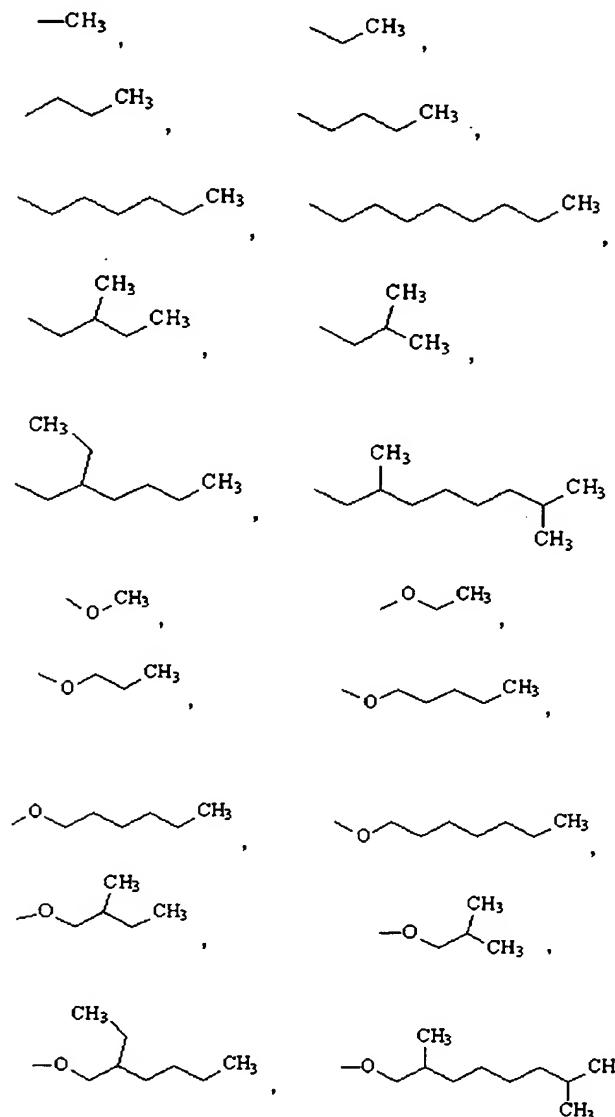
X is O or S;

Y and Z are N; and

a is an integer of 1-3.

[4] The organic electroluminescent polymer as set forth in claim 1, wherein said R₇ and R₈, respectively are selected from the following group:

H,



[5] The organic electroluminescent polymer as set forth in claim 1, wherein said Ar is selected from the following group:

(i) a substituted or unsubstituted arylene group of 6-60 carbons;

(ii) a substituted or unsubstituted heterocyclic arylene group of 2-60 carbons in which at least one hetero-atom selected from the group consisting of N, S, O, P and Si is incorporated in an aromatic ring;

(iii) a substituted or unsubstituted arylenevinylene group of 6-60 carbons;

(iv) a substituted or unsubstituted arylamine group of 6-60 carbons;

(v) a substituted or unsubstituted carbazole group of 12-60 carbons; and

(vi) combinations thereof,

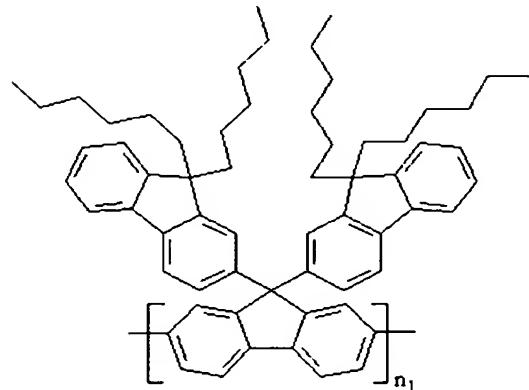
in which Ar may include a substituent selected from the group consisting of a linear or branched alkyl or alkoxy group of 1-20 carbons; an aryl group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons; a cyano group (-CN); and a silyl group.

[6] The organic electroluminescent polymer as set forth in claim 1, wherein a ratio of l:m ranges from 5:95 to 95:5.

[7] The organic electroluminescent polymer as set forth in claim 5, wherein said Ar is present in an amount of 5-15 mol% in the electroluminescent polymer, with proviso of being a substituted or unsubstituted arylamine group of 6-60 carbons.

[8] The organic electroluminescent polymer as set forth in claim 1, wherein the organic electroluminescent polymer has the following Formula 2:

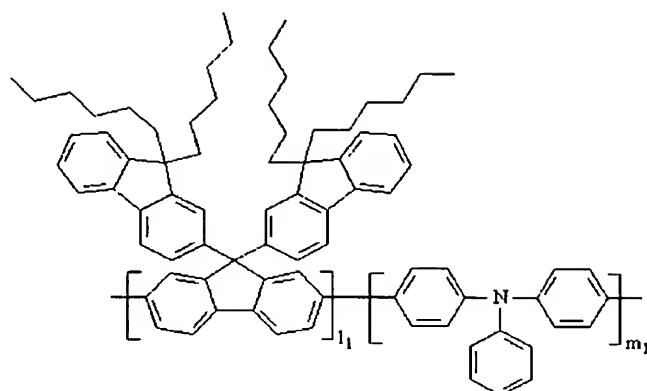
Formula 2



wherein, n_1 is an integer from 1 to 100,000.

[9] The organic electroluminescent polymer as set forth in claim 1, wherein the organic electroluminescent polymer has the following Formula 3:

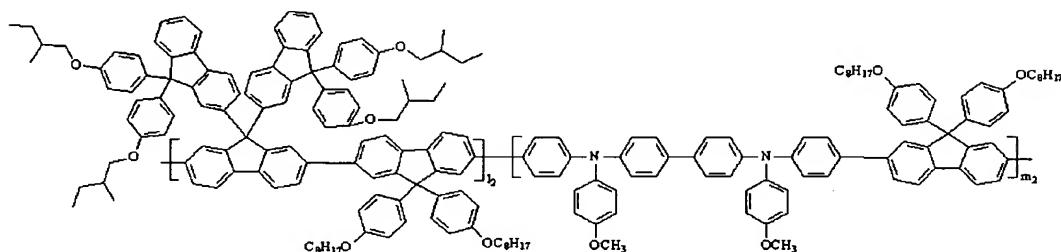
Formula 3



wherein, l_1 is an integer from 1 to 100,000, and m_1 is an integer from 1 to 100,000.

[10] The organic electroluminescent polymer as set forth in claim 1, wherein the organic electroluminescent polymer has the following Formula 4:

Formula 4



wherein, l_2 is an integer from 1 to 100,000, and m_2 is an integer from 1 to 100,000.

[11] An organic electroluminescent device having at least one layer comprising the polymer according to claim 1 between an anode and a cathode, wherein, the layer is a hole-transport layer, a light emitting layer, an electron-transport layer or a hole blocking layer.

[12] The organic electroluminescent device as set forth in claim 11, wherein the electroluminescent device comprises a structure of anode/light emitting layer/cathode, anode/hole transport layer/light emitting layer/cathode, or anode/hole transport layer/light emitting layer/electron transport layer/cathode.